

There's more to balancing than adding weights to your machine

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To learn how to balance a 500 MW steam turbine generator set, an overhung pump, or a gearbox, etc., you need to practice balancing a 500 MW steam turbine generator set, an overhung pump, or a gearbox. **For this reason, the on-site balancing courses provided by Bently Nevada are specifically tailored to your machinery and your needs.**

Before you insert balance weights into **any** machine, you need to determine the following:

Is unbalance the root cause of the problem?

Balancing is rarely a valid solution to anything except an unbalance problem. If any unusual responses result during a balancing job, special attention must be given to the possibility of a shaft crack. Do you know the symptoms? Do you know the difference between “usual” and “unusual” responses?

What are the balance characteristics of your machine?

- Location of rotor mass.
- Mode shapes.
- Location and number of balance planes.
- Influence vectors at different machine speeds.

- Influence vectors at different machine loads.
- Thermal or environmental effects.
- Anisotropic stiffness effects on weight placement.

Will balancing cause other machinery problems to appear?

It can be very disconcerting to find that your well-balanced machine now has a fluid-induced instability (whirl or whip) or rub problem. However, depending on the machine, these results shouldn't be entirely unexpected.

What is the balance history of the machine?

Knowing what size weights were used, where they were placed, what influence vectors were computed, and what problems resulted, is essential to an efficient, successful balancing operation.

The Bently Nevada on-site balancing course teaches you the techniques needed for that successful balance job. Learn why influence vectors and calibration weights are so important for effective single plane balancing of fans and other low-speed machinery.

Understand why the information contained in polar plots is essential for multiplane balancing of machines operating above their second balance resonances. Learn the value of virtual probe rotation when balancing

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machines with anisotropic support stiffness. Classroom instruction and hands-on workshops provide a good foundation in balancing fundamentals before you attempt to balance your machine. Hands-on training **on your machines** helps reinforce this training.

Contact your nearest Bently Nevada sales or service professional to arrange for a balancing course at your site. 